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EXAMINER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS,
WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>29 April 2005</u>.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-24</u> is/are pending in the application.

　　4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) <u>1,4,5,7-13,16,17 and 19-24</u> is/are rejected.

7)☒ Claim(s) <u>2,3,6,14,15 and 18</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

　　Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

　　Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

　　a)☐ All b)☐ Some * c)☐ None of:

　　　1.☐ Certified copies of the priority documents have been received.

　　　2.☐ Certified copies of the priority documents have been received in Application No. _____.

　　　3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
　　　　　application from the International Bureau (PCT Rule 17.2(a)).

　　* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>04/29/2009</u>.

4)☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 101

Claim(s) 1 is/are rejected under 35 U.S.C. 101 as not falling within one of the four

statutory categories of invention.   Supreme Court precedent[1] and recent Federal Circuit

decisions[2] indicate that a statutory "process" under 35 U.S.C. 101 must (1) be tied to

another statutory category (such as a particular apparatus), or (2) transform underlying

subject matter (such as an article or material) to a different state or thing. While the

instant claim(s) recite a series of steps or acts to be performed, the claim(s) neither

transform underlying subject matter nor positively tie to another statutory category that

accomplishes the claimed method steps, and therefore do not qualify as a statutory

process.   For example the method for transcoding digital images including the steps of

"decoding of at least portions of a first image", "obtaining first coefficients", "quantization

according to a second method", "obtaining second coefficients", " coding of the first

coefficients", and "obtaining at least portions of the second" is of sufficient breadth that it

would reasonably be interpreted as a series of steps completely performed mentally,

verbally, or without a machine.

The Applicants has provided no explicit and deliberate definitions to tie the

method for transcoding digital images including the steps of "decoding of at least

portions of a first image", "obtaining first coefficients", "quantization according to a

second method", "obtaining second coefficients", " coding of the first coefficients", and

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[1] *Diamond v. Diehr*, 450 U.S. 175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972); *Cochrane v. Deener*, 94 U.S. 780, 787-88 (1876).
[2] *In re Bilski*, 88 USPQ2d 1385 (Fed. Cir. 2008).

"obtaining at least portions of the second" to limit the steps to a particular apparatus or

device.

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

2.   The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1.   Determining the scope and contents of the prior art.
2.   Ascertaining the differences between the prior art and the claims at issue.
3.   Resolving the level of ordinary skill in the pertinent art.
4.   Considering objective evidence present in the application indicating
        obviousness or nonobviousness.

3.   Claims 1,4-5, 7-9, 11-13, 16-17, 19-21 and 23-24 are rejected under 35 U.S.C.

103(a) as being unpatentable over Wu et al., An Efficient JPEG to MPEG-1 Transcoding

Algorithm in view of Fu et al., US-7,379,498.

4.   Regarding **claim 1**, Wu teaches A method for transcoding digital images,

comprising: decoding of at least portions of a first image coded according to a first

method (JPEG DCT-based decoder, fig. 2(a), (b)), for obtaining first coefficients of a

luminance component and chrominance components of the first image coded according

to the first method (2.2 System considerations, pg. 448); combined inverse quantization

according to the first method and quantization according to a second method (MPEG-1

encoder, fig. 2(a).Further, fig. 2, discloses the Q and Q-1,) of the first coefficients of the

chrominance components of the first image coded according to the first method (fig. 1),

for obtaining second coefficients of chrominance components (2.1 Skeletons of the

transform domain JPEG to MPEG-1 format convert, pg. 448 and 449) of at least

portions of a second image according to the second method having the same chroma

format as the first image coded according to the first method (2.1 Skeleton of the

transform domain JPEG to MPEG-1 format converter, pg. 448); and coding (fig. 1) of

the first coefficients of the luminance component of the at least portions of the first

image coded according to the first method (2.1 Skeleton of the transform domain JPEG

to MPEG1 format converter, pg 448 and fig. 1, video input to JPEG encoder) and of the

second coefficients of the chrominance components of the at least portions of the

second image according to the second method (fig. 1), for obtaining at least portions of

the second image decodable according to the second method (input to MPEG-1

decoder, fig. 1). Wu does not explicitly teach a by means of a chrominance quantization

matrix of the first method for inverse quantization according to the first method and a

luminance quantization matrix of the first method for quantization according to the

second method

5.   However, Fu teaches a means of a chrominance quantization matrix of the first

method for inverse quantization according to the first method (fig. 1 element 22) and a

luminance quantization matrix of the first method for quantization according to the

second method (column 6 line 7-9 and table 1).

6.   Therefore, it would have been obvious to one of ordinary skill in the art at the

time of the invention to incorporate the teachings of Fu with Wu for providing improved

image processing.

7.   Regarding **claim 4**, Wu (modified by Fu) as a whole teaches everything as

claimed above, see claim 1. In addition, Wu teaches the method according to claim 1,

further comprising: decoding of the at least portions of the second image decodable

according to the second method (fig.1).

8.   Regarding **claim 5**, Wu (modified by Fu) as a whole teaches everything as

claimed above, see claim 1. In addition, Wu teaches the method according to claim 1,

wherein the first image coded according to the first method is an JPEG image (fig. 2,

input source JPEG compressed bitstream), and the second image coded according to

the second method is an MPEG intra frame (fig. 2(b) element, MPEG-1 encoder and

Algorithm 1 (all JPEG-compressed input images are converted into I pictures), 2. Bitrate

reduction, pg. 450).

9.   Regarding **claim 7**, Wu (modified by Fu) as a whole teaches everything as

claimed, see claim 5. In addition, Wu teaches the method according to claim 5 wherein

the decoding comprises: JPEG variable length decoding (fig. 2, entropy decoder) of the

luminance component and the chrominance components of the JPEG image (2.1

Skeleton of the transform domain JPEG to MPEG-1 format converter, pg. 448); and

JPEG run length decoding of the JPEG variable length decoded luminance component and chrominance components (fig. 2(a), (b)) , for obtaining quantized discrete cosine transform coefficients of a luminance component and chrominance components of the JPEG image (fig. 2 DCT).

10.   Regarding **claim 8**, Wu (modified by Fu) as a whole teaches everything as claimed above, see claim 5. In addition, Wu teaches the method according to claim 5, wherein the coding comprises: MPEG run length coding of the quantized discrete cosine transform coefficients (fig. 2) of the luminance component of the JPEG image and of the quantized discrete cosine transform coefficients of chrominance components of a MPEG intra frame (fig. 2; and MPEG variable length coding of the result of the MPEG run length coding (fig. 2(a), VLC).

11.   Regarding **claim 9**, Wu (modified by Fu) as a whole teaches everything as claimed above, see claim 5. Wu is silent in regards to the method according to claim 5, wherein MPEG-2 is used.

12.   However, Fu teaches wherein MPEG-2 is used (fig. 1).

13.   Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Fu with Wu (modified by) for providing a more economical and versatile reconstruction of still picture images, column 1 line 20-21.

14.   Regarding **claim 11**, Wu (modified by Fu) as a whole teaches everything as claimed above, see claim 5. In addition, Wu teaches the method according to claim 5, wherein MPEG-1 is used (fig. 1-2(a), (b)).

15.   Regarding **claim 12**, Wu (modified by Fu) as a whole teaches everything as claimed above, see claim 5. In addition, Wu teaches the method according to claim 5, wherein the chroma format of the JPEG image and the MPEG intra frame is 4:2:0. (If the color space used for JPEG can be converted into the color space into the color space used for MPEG-1 with linear operations, the conversion of both the color spaces can be done directly in the transform domain, but the cost may very high depending on the color space used in the JPEG. For avoiding this problem, only three color spaces are allowed in our format converter, i.e., YCbCr 4:4:4, YCbCr 4:2:2 and YCbCr 4:2:0., 2.2 System consideration, pg. 449).

16.   Regarding **claim 16**, see the analysis and rejection made for claim 1 except this is a claim to a device for transcoding images with the same limitations as claim 1.

17.   Regarding **claim 16**, see the analysis and rejection made for claim 4 except this is a claim to a device for transcoding images with the same limitations as claim 4.

18.   Regarding **claim 17**, see the analysis and rejection made for claim 5, except this is a claim to a device for transcoding images with the same limitations as claim 5.

19.   Regarding **claim 19**, see the analysis and rejection made for claim 7, except this
is a claim to a device for transcoding images with the same limitations as claim 7.

20.   Regarding **claim 20**, see the analysis and rejection made for claim 8, except this
is a claim to a device for transcoding images with the same limitations as claim 8.

21.   Regarding **claim 21**, see the analysis and rejection made for claim 9, except this
is a claim to a device for transcoding images with the same limitations as claim 9.

22.   Regarding **claim 23**, see the analysis and rejection made for claim 11, except
this is a claim to a device for transcoding images with the same limitations as claim 11.

23.   Regarding **claim 24**, see the analysis and rejection made for claim 12, except
this is a claim to a device for transcoding images with the same limitations as claim 12.

24.   Claims 10 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable
over Wu et al., An Efficient JPEG to MPEG-1 Transcoding Algorithm in view of Fu et al.,
US-7,379,498 and in view of Son et al., US-7,159,233

25.　　　Regarding **claim 10**, Wu (modified by Fu) as a whole teaches everything as claimed above, see claim 5. Wu is silent in regards to the method according to claim 5, wherein MPEG-4 is used.

26.　　　However, Son teaches where one example of such transcoding is the conversion of MPEG-2 content into MPEG-4 content that can be played on a graphic processor in set top terminals or personal computer (PC) terminal, column 3 line 34-38. Since Wu teaches the desire to transcode JPEG to MPEG-1, and it well recognized in the MPEG video compression art that coding algorithms for the MPEG1 and MPEG2 share similar algorithms, it is certainly considered obvious and within one skilled in the art to modify or replace the MPEG1 encoder within the JPEG to MPEG1 transcoder of Wu with the MPEG-4 encoder of Son.

27.　　　Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Son with Wu (modified by Fu) for providing improved image processing.

28.　　　Regarding **claim 22**, see the analysis and rejection made for claim 10, except this is a claim to a device for transcoding images with the same limitations as claim 10.

Allowable Subject Matter

29.　　　Claims 2-3, 6, 14-15 and 18 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter.

The present invention as claimed involves a method for transcoding video data wherein

the combined inverse quantization according to the first method and quantization

according to the second method comprises: deriving of each of the second coefficients

of chrominance components of the at least portions of the second image according to

the second method as the multiplication of a corresponding coefficient of the first

coefficients of the chrominance components of the first image coded according to the

first method with a quotient between a corresponding element in the chrominance

quantization matrix of the first method and a corresponding element in the luminance

quantization matrix of the first method.

Conclusion

30.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

31.   Brake et al., US-2003/0179937

32.   Linzer et al., US-6,141,447

       Any inquiry concerning this communication or earlier communications from the

examiner should be directed to JESSICA ROBERTS whose telephone number is

(571)270-1821. The examiner can normally be reached on 7:30-5:00 EST Monday-

Friday, Alt Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha D. Banks-Harold can be reached on (571) 272-7905. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Marsha D. Banks-Harold/
Supervisory Patent Examiner, Art Unit 2621

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